AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in this application:

1. (Currently Amended) An electrical switch comprising:

a first conducting droplet having a first voltage;

a second conducting droplet having a second voltage; and

means for reversibly contacting said first droplet with said second droplet; said reversibly contacting said first droplet with said second droplet occurring within a housing of said electrical switch and as a function of capillary action; and

wherein said first conducting droplet and said second conducting droplet remain stationary with respect to said housing of said electrical switch.

2. (Original) The electrical switch of claim 1 wherein said means for contacting comprises:

means for creating a first voltage differential between said first droplet and a first electrode; and

means for creating a second voltage differential between said second droplet and a second electrode.

3. (Original) The apparatus of claim 2 wherein said means for creating a first voltage differential comprises at least a first voltage source electrically connected to said first electrode and said first droplet, said first electrode electrically insulated from said first droplet.

4. (Original) The apparatus of claim 2 wherein said means for creating a second voltage potential comprises at least a first voltage source electrically connected to said second electrode and said second droplet, said second electrode electrically insulated from said second droplet.

5. (Original) The apparatus of claim 1 wherein said means for reversibly contacting said first droplet with said second droplet comprises a heat source for increasing the pressure applied to said first droplet, thus causing said first droplet to contact said second droplet.

6. (Currently Amended) An electrical switch comprising:

a first conducting droplet having a first voltage;

a second conducting droplet having a second voltage;

a first electrode in proximity to said first conducting droplet;

a second electrode in proximity to said second conducting droplet;

at least a first voltage source for applying a voltage to at least said first electrode ~~at least one of said first conducting droplet and said second conducting droplet~~such that said first conducting droplet is separated, as a function of capillary action, from said second conducting droplet within a housing of said electrical switch, thereby preventing an electrical current from flowing from said first conducting droplet of liquid to said second conducting droplet of liquid; and

wherein said first conducting droplet and said second conducting droplet remain stationary with respect to said housing of said electrical switch.

7. (Currently Amended) The electrical switch of claim ~~5~~ 6 further comprising a first fluid surrounding said first conducting droplet, said fluid immiscible with said first conducting droplet.

8. (Currently Amended) The electrical switch of claim ~~6~~ 7 further comprising a second fluid surrounding said first conducting droplet, said fluid immiscible with said first conducting droplet.

9. (Currently Amended) The electrical switch of claim ~~7~~ 8 wherein said first fluid and said second fluid comprise the same fluid.

10. (Currently Amended) A method for use with a switch in an electrical circuit, said switch comprising a first conducting droplet of liquid and a second conducting

droplet of liquid, said first conducting liquid droplet and said second conducting liquid droplet being disposed within a housing of said electrical circuit, said method comprising:

contacting, as a function of capillary action, said first conducting droplet of liquid with said second conducting droplet of liquid in a way such that an electrical path is formed between said first conducting droplet of liquid and said second conducting droplet of liquid, and said first conducting droplet and said second conducting droplet remain stationary with respect to said housing of said electrical switch.

11. (Original) The method of claim 10 further comprising:

separating said first conducting droplet of liquid from said second conducting droplet of liquid in a way such that said electrical path is removed.

12. (Currently Amended) A method for opening a switch in an electrical circuit, said switch having a first conducting droplet of liquid and a second conducting droplet of liquid disposed in a housing, and wherein, when contacted, said first and second conducting droplets form an electrical path, said method comprising:

applying a first voltage differential between a first electrode and said first conducting droplet of liquid; and

applying a second voltage differential between a second electrode and said second conducting droplet of liquid,

wherein, upon applying said first voltage differential and said second voltage differential, said first conducting droplet is separated, as a function of capillary action, from said second conducting droplet, thus preventing an electrical current from flowing from said first conducting droplet of liquid to said second conducting droplet of liquid; and

wherein said first conducting droplet and said second conducting droplet remain stationary with respect to said housing.